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RICHARD H. MAY

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KEITH ARNOLD, DIRECTOR

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COVER PHOTO:

Pole handling in a yard
at Stockton, California

Agriculture--Forest Service, Berkeley, Calif.

THE PRODUCTION OF POLES, PILING, AND MINE TIMBERS IN CALIFORNIA, 1956

By Richard H. May
Division of Forest Economics

California produced 3,764,000 cubic feet of wooden utility poles in 1956--more than 3-1/2 times the 1,019,000 cubic feet produced in 1952, the latest year of comparable survey.[1/] Piling production--at 683,000 cubic feet--was down 8 percent from the 743,000 cubic feet produced 4 years earlier. Production of round and hewn mine timbers totalled 149,000 cubic feet, less than half the volume of 338,000 cubic feet, estimated from the last comprehensive survey of 1950.[2/]

The 1956 figures are from a survey of pole processors and mine operators by the California Forest and Range Experiment Station.

Although poles, piling, and round and hewn mine timbers have widely different uses--above ground, in the water, and underground--in California, they all are cut mostly from small sawtimber trees and are used without sawing. So they are here reported together.

Pole production

About 70 percent of the poles in 1956 were cut from Douglas-fir, the rest from ponderosa pine. The Pine Region of the State provided a little over three-fourths of the total, including two-thirds of the Douglas-fir. Less than one-fourth came from the Redwood Region (table 1).

Table 1.- Estimated production of utility poles by species and region, California, 1956

Species and unit	Pine Region	Redwood Region	State total
Douglas-fir			
Pieces	73,507	38,498	112,005
Thousand cu.ft.	1,720.5	885.2	2,605.7
Ponderosa pine			
Pieces	65,976	1,337	67,313
Thousand cu.ft.	1,132.0	26.7	1,158.7
Total			
Pieces	139,483	39,835	179,318
Thousand cu.ft.	2,852.5	911.9	3,764.4

1/ May, R.H. Output of Forest Products in California, 1952. U. S. Forest Service, California Forest and Range Expt. Sta., Forest Survey Release 23 (Table 7), July 1954, 10 pp.

2/ May, R. H. Forest Products Used in Mines in California and Nevada, 1950. U. S. Forest Service, Calif. Forest and Range Expt. Sta., Forest Survey Release 15 (Table 1), Nov. 1952, 8 pp.

Piling production

Douglas-fir accounted for 85 percent of the wooden piling produced in California in 1956, ponderosa pine 13 percent, and eucalyptus the rest. The Pine Region provided almost two-thirds of the piling, including almost 60 percent of the Douglas-fir. The ponderosa pine came only from the Pine Region, and the eucalyptus only from the Redwood Region (table 2).

Table 2.- Production of piling by species and region, California, 1956

Species and unit	Pine Region	Redwood Region	State total
Douglas-fir			
Thousand lin.ft.	525.3	377.9	903.2
Thousand cu.ft.	336.6	244.1	580.7
Ponderosa pine			
Thousand lin.ft.	163.1	--	163.1
Thousand cu.ft.	88.9	--	88.9
Eucalyptus			
Thousand lin.ft.	--	20.2	20.2
Thousand cu.ft.	--	13.3	13.3
Total			
Thousand lin.ft.	688.4	398.1	1,086.5
Thousand cu.ft.	425.5	257.4	682.9

Mine timber production

Douglas-fir accounted for 99 percent of round mine timber production, and all the hewn timbers. Over 60 percent of the round timbers came from the Redwood Region, but most of these were used in Pine Region mines. The Pine Region itself supplied almost 40 percent (table 3).

Many mines used sawed timbers, but because sawed timbers are included with lumber in production reports, they were not covered in this survey even though some mines reported them voluntarily. Other mines use metal roof bolts. The trend is apparently toward greater use of metal supports and sawed timbers. A decline has been particularly noticeable in production of hewn timbers: from 61,000 cubic feet in 1950 to 4,000 in 1956. Total round timber production declined from 277,000 to 145,000 cubic feet over the 6 years.

Table 3.- Estimated production of round and hewn mine timbers by species and region, California, 1956

Species and unit	Pine Region	Redwood Region	State total
Douglas-fir			
Round	52.7	91.1	143.8
Hewn[1/]	4.0	0	4.0
Fir total	56.7	91.1	147.8
Ponderosa pine			
Round	1.2	--	1.2
Hewn	--	--	--
Pine total	1.2	--	1.2
All species			
Round	53.9	91.1	145.0
Hewn	4.0	0	4.0
Total	57.9	91.1	149.0

1/ Including split lagging.

Sizes of poles and piling

Average dimensions of poles and piling were reported along with numbers of pieces or lineal feet. These figures were then used to compute cubic volume. The range in average dimensions reported in 1956 (not greatly different from 1952) was as follows:

Product and species:	Average top diameter (Inches)	Average butt diameter (Inches)	Average length (Feet)
Poles			
Douglas-fir	6-8	11-13	40-45[1/]
Ponderosa pine	6-7	9-13	25-40
Piling			
Douglas-fir	7-8	13-16	50-70[2/]
Ponderosa pine	7	13	50
Eucalyptus	8	14	60

1/ Extreme range for individual Douglas-fir poles 25-80.
2/ Extreme range for individual Douglas-fir piling 20-90.

Consumption of poles and piling

Consumption of utility poles in California was greater than production in 1956. The California Public Utilities Commission reports 237,000 poles set in that year, from a survey of California pole-using utilities. The species of poles set and percentage of each were:

Species:	Percent
Douglas-fir	84
Western red cedar	10
Pine	4
Larch	2-
Other	0+
Total	100

Since California pole production was 62 percent Douglas-fir and 38 percent ponderosa pine, it is apparent that California receives Douglas-fir, Western red cedar, and larch poles from other states; and sends pine poles, possibly Douglas-fir also, to other states.

Treatment with preservative of poles set by California utilities, according to the California Public Utilities Commission, was:

	Percent
Full treatment	90
Butt treatment	6
Untreated	4
Total	100

Similar consumption figures are not available on the amount of piling set, species, and treatment. Marine piling (for wharves and docks) are almost all treated. Piling under buildings are largely untreated. The relative amounts going to the two uses was not determined.

SURVEY PROCEDURE

Poles and piling

Lists of pole and piling processing yards are available from "Wood Preservation Statistics," published annually by the Forest Service of the U. S. Department of Agriculture in cooperation with the American Wood Preservers Association. The Station sent to the companies listed in the 1955 report, forms requesting information on the volume of poles and piling purchased or processed, by geographic origin of timber, and average dimensions per piece. Replies were received from all but one company. This company's receipts were estimated from the figures of replying companies in its section of the State. Because of the few replies involved, no sampling error was computed. Small poles for farm, forest, and miscellaneous use were not included in this survey.

Mine timbers

The U. S. Bureau of Mines, Mineral Statistics Branch, in San Francisco, supplied the Station with a list of the larger active underground mines in 1956--those with an estimated production of 1,000 tons or more of ore or non-metallic material of value. This limit was set because a 1950 survey of all mines showed that 96 percent of the round mine timbers, and 92 percent of the hewn, were used by mines producing 1,000 or more tons of ore.

A form for reporting round and hewn mine timber receipts was sent to 68 large underground mines. Of these, 60 replied by mail. Three were visited in the field to obtain the desired information. The use by three southeastern desert mines not replying was estimated at none, since all other mines reporting from this area showed no use of round or hewn timbers. Two of the listed mines proved to be inactive in 1956.

Non-metal mines reported no use of round mine timber in 1956, as in 1950.

Timber use by mines producing less than 1,000 tons of ore was estimated from timber-ore ratios, computed from ore tonnage data supplied by the U. S. Bureau of Mines, Mineral Statistics Branch, San Francisco. The computed ratios, in cubic feet of timbers used per ton of ore produced, were:

	1950[2/]	1956
Large metal mines	0.45	0.42
Small metal mines	0.87	0.81

Use of round and hewn timbers is about the same as production in California, and for Forest Survey purposes use and production are considered equal.

2/ Op. cit., page 1.